

## Solutions to PYQs on Financial Management

### Unit- 1: Finance function- Nature, Scope and objectives of financial management- Risk and return relationship.

**1983:** 'The role of a finance manager today is considerably different from what it was a few decades ago.' Explain.

**Answer 1983:** Role of finance managers is dynamic on account of integral part of business, which is not static. With changes in economic environment such as cut throat competition, technological environment such as AMT, AIT, political environment such as protection measures, etc environment, role of finance managers has undergone change significantly.

Till 1950's, finance managers played a subsidiary role to management such as just arrangement of funds, reconciliation of financial statements etc. it was episodic.

Today role has become more important, pervasive, frequent, intense, direct, significant and more valuable. It can be listed as follows:

1. Acquiring funds from global sources at most competitive rates and ensuring better utilization thereof.
2. Managing relations with variety of stakeholders, regulators and ensuring legal compliances. Investors meet after results on call.
3. Frequent and direct involvement in business decisions such as product branding and selling with financing options; innovation, research and startup funding.
4. Financial innovations have become both challenge and opportunity to respectively protect and add wealth of the enterprise. Example Fintech companies like Paytm providing e-wallet.
5. Risk management to safeguard against global financial and business challenges. Business models and financial engineering are becoming outdated at faster pace. Acquisition of Corus by Tata steel.
6. Today's Finance professionals are business partners( financing approach to product marketing) to safeguard corporate wealth through financial restructuring, mergers and acquisitions etc.

Unlike past, today finance managers, not CEOs, are responsible for financial health of the firm. They have to build and maintain profitability, financial health and investor brand of the company.

**1992:** How is the **objective** of wealth maximisation a superior economic goal as against of profit maximisation?

**Answer 1992:** profit maximization and wealth maximization are considered as two **competing and mutually exclusive** goals of finance function. On following arguments, wealth maximization is considered superior:

1. **Broader concept** of cash flow rather than narrow approach of net income.
2. Serving multiple stakeholders, not just shareholders, even managerial performance. Focus on socio-political and economic rationale.
3. Long term interest and survival of the firm, rather than quarterly or annual profitability.

4. Bigger the better principle rather than narrow and limited goals. High volume with low margin per unit.
5. Risk management and sustainable resource use, in place of exploitation without vision. Recycling of waste. Rather than extraction of natural resources. Novalis of Birla group recycles used beverage cans to produce aluminum.

Today wealth and value maximization are emphasized in forms like green technologies, renewal power, empowerment of disadvantaged sections, anti-profiteering state policy etc. Companies ignoring wealth creation are failing fast with regulatory actions and survival of the fittest. Penalties in Britain on Google on account manipulating search data. Companies like Infosys, Wipro have improved their image in all sections of society due to middle class focus and creating millions of wealth for different stakeholders, not for just shareholders.

**2002:** What should, in your opinion, be the **objective** of financial management? Briefly state the broad area of financial management. **30**

**Answer 2002:** Profit maximization and wealth maximization are two competing objectives of financial management.

Largely enterprises emphasize maximizing their profits. It is highly motivational, creates buffer for bad times, test of competitiveness etc. but it is criticized on grounds of vague concept, prone to exploitation, short term focus etc.

On the hand wealth maximization is taken as sound objective due to features like long term focus, balancing risk-return, serving various stakeholders and meeting wider social, national and even man-kind expectations like climate change. It is less rewarding on day to day basis, but essential for sustainable growth and survival of the enterprise.

For the past two decades environmental demands have increased such as CSR, climate protection, swatch Bharat, inclusion and fair practices. Besides, market economies provide enough opportunities for profit maximization. Taping business opportunities to generate revenue and create cash surplus cannot be under-emphasized.

Really it has become difficult to balance growth (training the workers) and profitability (more and more work). ETIG came out with conclusion that profit maximization should be replaced with profit mapping where companies aim at reasonable return; and create value for society at large, not just for shareholders.

**Broad areas of financial management:**

1. **Regular diagnosis and understanding of** financial and operating health of the firm such as...
2. Three main functions discharged by finance managers include-
  - **Investing** that includes capital budgeting and working capital management.
  - Financing, by emphasizing capital structure planning.
  - **Dividend policy decisions** to balance resource requirements of the firm and cash yield expected by shareholders.

Today **risk management** has come in the scope of FM on account of global, dynamic and complex business environment. ~~Finance managers need be more cautious, dynamic and responsive to fast emerging opportunities, challenges and threats provided by environment.~~ Such as safeguarding against economic slowdown, forex rate changes, interest rate fluctuations, demonetization,

mergers and acquisitions, starts ups, disruptive technologies etc. Thereby corporate restructuring has emerged as more a routine function, unlike an episodic task decades back.

**Answer 2003:** wealth maximization is widely accepted objective of financial management. Thereby it is reflected in all the functions of management, whether investing, financing or dividend.

**While making investment decisions** such as establishment of new plant, merger and acquisition etc finance managers have to evaluate the project from the perspective of impact on business risk, return, and market capitalization of the firm and its earnings in long term. Any investment decision having negative impact on value of firm is objected immediately and decisively by capital market. While planning the capital structure or making financing decision, the focus is leverage impact of firm's value. An ideal capital structure is one that maximizes EPS and share prices, besides containing financial risk within manageable limit.

Dividend decision also aims at likely impact on market value, or how market will react thereto. Today companies are conscious enough to maintain stable dividend policy to ensure steady wealth creation for investors.

Despite wealth focus behind corporate decision, other legal, commercial, environmental, technological considerations may work behind financial decisions. For example companies complying with BS IV norms despite negative impact on wealth creation, at-least in short term. Firms like Air India are working on political and other national considerations despite bearing huge losses with deteriorating wealth year after year.

## Unit 02: Ratio Analysis

**2014:** Write a note on two important issues of:

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- (i) **the ratio of current assets to sales (relative asset liquidity) and**
  - (ii) **the ratio of short-term financing to long-term financing (relative financing liquidity)**
- in formulating working capital policy.**

**Answer:** (Teacher Note- 10 marker long answer should be written in around 140-170 words)

(i) **As the name signifies** ratio of current assets to sales is a measure of how much current assets or liquidity the firm maintains for the support of turnover operations. Higher the ratio-greater the liquidity and smoother business operations. But, Current Assets Turn-over ratio is reduced resulting into lesser productivity, higher cost of financing.

**One other hand lower Relative Asset Liquidity** is risky. Business operations may suffer on account of lower liquidity such as out-of-stock problem, payment issues etc. On the positive side Current Assets Turnover ratio is high signaling better productivity and profitability potential.

Management should **keep optimum level of Relative Asset Liquidity**. Neither over-trading, not under-trading. There is no standard. It varies from industry to industry and firms own experiences. Further, current asset should have **right mix** of Inventory, Receivables and Cash.

(ii) **Long-term finance** is costly (interest, dividends), whereas short-term finance such as trade credit, out-standing expenses are **cost-free**. Hence greater the relative financing liquidity, lower the funding costs. But it brings default risk. Hence firm should keep

moderate to lower level of short-term funds. Bank over-draft facility should be used to reduce default risk and moderate the cost of funds.

**2015: Explain the important ratios that will be used in each of the following situations:**

**(i) A bank is approached by a company for a working capital facility of Rs. 50 lacs.**

**Answer:** For banks **security** and **regular service** of borrower accounts are primary objectives and concern. For this banks look for existing and proposed quick ratio, current ratio and debt/equity ratio & Debt Services ratio to make sure that both short-term and long-term financial condition is not poor. GP Ratio and NP Ratios will help bank get assured about future earnings and debt service capacity of the firm.

**(ii) A long-term creditor who is interested in knowing whether his claim is adequately secured.**

**Answer:** Here Debt-equity ratio is most useful. Ideally it should be 2:1. If it is lower than 2:1 long-term creditor would be more secure whereas higher debt-equity ratio, say 5:1, will signal insecurity. Besides, higher levels debt service ratio and proprietary ratios will also provide additional security.

**(iii) A shareholder who is examining his portfolio to decide whether to hold or sell his holdings in the company.**

**Answer:** Here EPS, PER and P/B ratios are most useful. If EPS is falling, PER and P/B are too high sell decision would be appropriate. In case EPS is stable or increasing and PRR and P/B ratios are below industry levels, hod decision would be appropriate.

**(iv) A finance manager who is interested to know the effectiveness with which the available resources are utilized.** **15**

**Answer:** Effectiveness of resource utilization can be measured with the help of **activity ratios** like Inventory turnover ratio, debtors turnover ratio, capital employed turnover ratio, asset turnover ratio. Higher the ratios, better the asset use. Further, **ROA** is primary overall profitability ratio to measure effectiveness. Higher the ratio, better the resource use.

**Tutorial advice on question 2015-** Since above question carried 15 marks, candidates should try to finish it in maximum of three pages. It means around 225 words. Since there are 4 parts in question, each part should be answered in about 55-60 words ( $225/4 = 56.25$ ).

## Solutions to Numerical PYQs on Capital Budgeting

### Solution1981

#### Cash Flow

At  $Y_0 = 1, 00,000$  – sale value of old machine Rs. 8,000 = 92,000

Tax shield on STC Loss @ 55% of (25000-8000) = 9,350

Net Cash Outflow 82,650

**Annual Cash Flow** =  $Y_1$  to  $Y_5$

Saving of operating costs = 20,000 P.A.

Additional Contribution = 25,000 P.A.

Total saving = 45,000

$$\text{Annual Depreciation} = \frac{1,00,000 - 10,000}{5} = 18,000$$

$$\text{Incremental Depreciation} = 18,000 - 5,000 = 13,000$$

$$\text{Annual Cash Flow after Tax} = (45,000 - 13,000) (1 - 0.55) + 13,000 = 27,400$$

$$\text{Terminal Cash Flow (Incremental)} = 10,000 - \text{Nil} = 10,000$$

(STCG Nil as asset is sold at WDV)

$$\text{Present value of Annual Cash Flows} = 27,400 \times 2.991 = 81,953$$

$$\text{Present value of salvage value} = \frac{10,000}{(1.20)^5} = 4,019$$

$$= 85,972$$

$$\text{Gross Present Value: NPV} = 85,972 - 82,650 = 3322$$

It is profitable to by new machine.

### Solution 1985:

$$\text{Initial Investment:} = 1,50,000 + 5,000 + 25,000 + 10,000 = 1,90,000$$

#### Annual Net Cash Flow

$$\text{Year 1} = 1,70,000 - 70,000^1 - 11,200 = 88,800$$

$$2 = 1,70,000 - 70,000 - 22,720 = 77,280$$

$$3 = 1,70,000 - 70,000 - 27,040 = 72,960$$

$$4 = 1,70,000 - 70,000 - 31,360 = 68,640$$

$$5 = 1,70,000 - 70,000 - 39,680 = 60,320$$

$$1. \text{ Annual Cash Operating Expenses } 15000 + 50,000 + 5,000 = 70,000$$

$$\text{Terminal Cash Flow} = 10,000 + 0.60(10,000) = 16,000$$

$$\text{GPV} = 88,800 (.9) + 77,280 (.8) + 72,960 (.7) + 68,640 (.6) + 60,320 (.57) + 16,000 (.57) = 2,77,502$$

$$\text{NPV} = 2,77,502 - 1,90,000 = 87,502$$

Since NPV is positive, It is advisable to undertake the project.

**Cost of the project** = Present value of: Investment, Annual cost after tax- Salvage realization.

### Solution 1987

#### (a) Payback Period of Projects

Cumulative Cash Flow (Project I)			Cumulative Cash Flow (Project II)		
Year	Annual	Cumulative	Year	Annual	Cumulative
1	35,000	35,000	1	20,000	20,000
2	30,000	65,000	2	24,000	44,000
3	20,000	85,000	3	35,000	79,000
4	Nil	85,000	4	50,000	1,29,000

5	25,000	1,10,000	5	16,000	1,45,000
6	12,000	1,22,000	6	8,000	1,53,000

$$\text{Payback (I)} = 4 + \frac{1,00,000 - 85,000}{25,000} = 4.6 \text{ years}$$

$$\text{Payback (II)} = 3 + \frac{1,00,000 - 79,000}{50,000} = 3.42 \text{ years}$$

**Considering payback-period** project II should be selected as it has lower payback. It is ensure faster recovery of investment and help fulfill financial commitments timely.

**(b) Discounted Cash Flow Method**

Since cost of capital @ 10% is given, NPV should be computed for project appraisal.

**NPV of Project I**

$$\text{GPV} = 35,000(.909) + 30,000 (.826) + 20,000 (.751) + 25,000(.621) + 12,000(.564) = 93,908$$

$$\text{NPV} = 93,908 - 1,00,000 = - 6,092$$

**NPV of Project II**

$$\text{GPV} = 20,000 (.909) + 24,000 (0.826) + 35,000 (.751) + 50,000 (.683) + 16,000 (.621) + 8,000 (.564)$$

$$\text{NPV} = 1,12,887 - 1,00,000 = 12,887$$

As per NPV method, Project II is better.

**Solution 1989 Q3.**

**GPV of Proposals:**

$$A = 95,400 (.893) + 39,000 (.797) + 12,000 (.712) = 1,24,819$$

$$B = 35,000 (.893) + 57,500 (0.797) + 80,000 (.712) = 1,34,043$$

$$\text{NPV (A)} = 1, 24,819 - 80,000 = \mathbf{44,819 \text{ Better}}$$

$$\text{NPV (B)} = 1,34,043 - 1,00,000 = 34,043$$

**PI = GPV/Investment**

$$A = 1,24,819/80,000 = \mathbf{1.56 \text{ Better}}$$

$$B = 1,34,043/1,00,000 = 1.34$$

Project A should be selected as it is superior on both **NPV & PI criteria.**

**Solution 1990:**

**Since** investments are assumed to be done at start of the financial year, outflow in Year 3 is taken at start of year 3 or end of year 2. Accordingly-

Cash flow equation to complete IRR

$$100 = \frac{200}{(1+IRR)^1} - \frac{75}{(1+IRR)^2} \qquad \text{Let } 1 + IRR = x$$

$$100 = \frac{200}{x} - \frac{75}{x^2} \quad \text{or} \quad 100 = \frac{200x - 75}{x^2}$$

$$100x^2 - 200x + 75 = 0$$

$$4x^2 - 8x + 3 = 0$$

$$4x^2 - 2x - 6x + 3 = 0$$

$$2x(2x - 1) - 3(2x - 1) = 0$$

$$= 2x - 1 = 0 \quad 2x - 3 = 0$$

$$x = \frac{1}{2} = 0.5 \quad x = \frac{3}{2} = 1.5$$

$$= I + IRR = 0.5 \quad I + IRR = 1.5$$

$$IRR = -0.5 \quad IRR = 1.5 - 1 = .5$$

$$= -50\% \quad \text{or } 50\%$$

**(ii) MIRR with K = 20%**

$$\text{PV of out flows: } 100 + \frac{75}{(12)^2} = 152$$

$$\text{TV of inflows: } 200(12)^1 = 240$$

$$\text{MIRR} = \sqrt{\frac{240}{152}} - 1$$

$$= .256 \text{ or } 25.6\%$$

Since MIRR is higher than cost of capital, Project is acceptable.

**Note-** Alternatively decision can be made on the basis of NPV by applying the desired rate of return of 20%.

**1991 Q3** 1. Payback period =  $11,000/2800 = 3.93$  years

**2(a) Time Adjusted Rate of Return or IRR**

$$\text{Try } 25\% \quad \text{PVAF}_{25\%, 10 \text{ years}} = 3.571 \quad \text{PV} = 2,800 \times 3.571 = 10,000$$

$$\text{Try } 20\% \quad \text{PVAF}_{20\%, 10 \text{ years}} = 4.192 \quad \text{PV} = 2,800 \times 4.192 = 11,738$$

$$\text{By Interpolating: } IRR = 20 + \frac{11738-11000}{11738-10000} (25-20) = 22.12\%$$

**2(b) NPV = GPV- Investment**

$$\text{GPV} = 2800(5.216) = 14,605.$$

$$\text{NPV} = 14,605 - 11,000 = 3606$$

$$\text{Payback Reciprocal} = \frac{1}{\text{Payback Period}} = \frac{1}{3.93} = .2544 \text{ or } 25.44\%$$

**Solution 1992**

**Cash Flow Table**

Year	Cash Inflow	Annual Depreciation	Taxable Profit	Profit After Tax	PAT + Depreciation	PVF	PV of Net Cash Flow	Cumulative Cash Flow
1	6,000	2,000	4,000	2,000	4,000	0.909	3,636	4,000
2	3,000	2,000	1,000	500	2,500	0.826	2,065	6,500
3	2,000	2,000	Nil	--	2,000	0.751	1,502	8,500
4	5,000	2,000	3,000	1,500	3,500	0.683	2,391	12,000
5	5,000	2,000	3,000	1,500	3,500	0.621	2,174	15,500
						<b>Total</b>	<b>11,768</b>	

$$\Rightarrow \text{Payback Period} = 3 + \frac{10,000 - 8,500}{3,500} = 3.43 \text{ years}$$

$$\Rightarrow \text{Average Rate of Return} = \frac{\text{Average Accounting Profit}}{\text{Average Investment}} \times 100$$

$$\text{Average Accounting Profit} = \frac{2,000 + 500 + 0 + 1,500 + 1,500}{5} = 1,100$$

$$\text{Average Investment} = \frac{\text{Initial Outlay} + \text{Salvage Value}}{2} = \frac{10,000 + 0}{2} = 5,000$$

$$\text{ARR} = \frac{1,100}{5,000} \times 100 = 22\%$$

$$\Rightarrow \text{NPV} = \text{PV of Cash Inflows} - \text{Investment} = 11,768 - 10,000 = 1,768$$

**Solution 1993 Q2**

Year	Cash Flow before Tax	Annual Depreciation	PBT	PAT = PBT (1-.50)	PAT + Depr.	PVF	PV	Cumulative Cash Flow
1	20,000	20,000	---	---	20,000	.909	18,180	20,000
2	22,000	20,000	2,000	1,000	21,000	.826	17,346	41,000
3	28,000	20,000	8,000	4,000	24,000	.751	18,024	65,000
4	30,000	20,000	10,000	5,000	25,000	.683	17,075	90,000
5	50,000	20,000	30,000	15,000	35,000	.621	21,735	1,25,000
							<b>92,360</b>	

$$(1) \text{Payback Period} = 4 + \frac{1,00,000 - 90,000}{35,000} = 4.28 \text{ years}$$

$$(2) \text{Average Rate of Return} : = \frac{\text{Average Accounting Profit}}{\text{Average investment}} \times 100$$



$$\text{Average Accounting Profit} = \frac{0+1,000 + 4,000 + 5,000 + 15,000}{5} = 5,000$$

$$\text{Average Investment} = \frac{1,00,000 + 0}{2} = 50,000 \quad \text{ARR} = \frac{5,000}{50,000} \times 100 = 10\%$$

$$(3) \text{ NPV} = 92,360 - 1,00,000 = - 7,640$$

$$(4) \text{ PI} = \frac{92,360}{1,00,000} = 0.9236$$

**1994. Q3:**

**Statement of Profit**

Year	Profit after tax	PBT (PAT/0.5)	Depreciation Rs.	(Cash Profit before Tax: PBT + Dep.	Cash Profit after tax PAT + Dep.
1	25,000	50,000	14,000	64,000	39,000
2	20,000	40,000	14,000	54,000	34,000
3	20,000	40,000	14,000	54,000	34,000
4	15,000	30,000	14,000	44,000	29,000
5	15,000	30,000	14,000	44,000	29,000
6	10,000	20,000	14,000	34,000	24,000
7	5,000	10,000	14,000	24,000	19,000

**Cumulative Cash Flow**

Year	Cum. PAT	Cum PBT	Cum PBT + Dep.	PAT + Dep
1	25,000	50,000	64,000	39,000
2	45,000	90,000	1,18,000	73,000
3	65,000	1,30,000	1,72,000	1,07,000
4	80,000	1,60,000	2,16,000	1,36,000
5	95,000	1,10,000	2,60,000	1,65,000
6	1,05,000	2,10,000	2,94,000	1,89,000
7	1,10,000	2,20,000	3,18,000	2,08,000

**Computation of different payback periods as required by question**

$$(i) = 2 + \frac{1,00,000 - 90,000}{40,000} = 2.25 \text{ years}$$

$$(ii) = 5 + \frac{5,000}{10,000} = 5.5 \text{ years}$$

$$(iii) = 1 + \frac{1,00,000 - 64,000}{54,000} = 1.67 \text{ years}$$

$$(iv) = 2 + \frac{1,00,000 - 73,000}{34,000} = 2.79 \text{ years}$$

Savage value is ignored for computation of payback because it would arise at the end of 7<sup>th</sup> year. It is also irrelevant for 2.25<sup>th</sup> year, 5.5<sup>th</sup> year, 1.67<sup>th</sup> year & 2.79<sup>th</sup> year.

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